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CHALLENGES IN LEARNING FIRST WORDS: MAKING LEARNING EASIER

It bears repeating that the large majority of young children with autism (approximately 90%) will rapidly acquire words using the previously described motivational procedures. However, a small number of children seem to have difficulty with the acquisition of first words. The following section presents some interventions that are particularly helpful for those children.

Using Familiar Verbal Routines

As described previously, PRT's motivational procedures consist of rewarding attempts, but occasionally a child will get stuck on a particular sound or word or may alternate between just a few sounds or words for labeling a variety of objects. That is, the child understands the connection between vocalizing for communicative purposes but has not learned that every item has a distinct label. Such difficulties can often be reduced through careful planning of initial target words for teaching. It is important to consider the context of the language learning opportunity: The more familiar and predictable the learning opportunity, the easier it will be for the child to succeed. Research suggests that imitation within familiar contexts is easier for children to learn (Masur & Ritz, 1984; McCabe & Uzigiris, 1983; McCall, Parke, & Kavanaugh, 1977) and, more specifically, that routines facilitate various aspects of language acquisition, from comprehension to production (Kim & Lombardino, 1991; Yoder & Davies, 1992; Yoder, Spruytenburg, Edwards, & Davies, 1995), as the predictable context is presumed to make the interaction less demanding for the child (Nelson, 1986). Therefore, if a child is exhibiting this problem, opportunities to evoke new and different words can be designed using familiar verbal routines or carrier phrases. For example, the parent/clinician may want to model "ready, set, go" before providing the child with an opportunity to engage in a favorite activity. Once the child can anticipate this situation, the parent/clinician must provide a pause, and the child must verbalize to complete the sequence, such as the opportunity to vocalize "go" after the parent/clinician says "ready, set." This can be instrumental as a maintenance task and can provide an easy opportunity for the child to develop the idea that a different word needs to be used. More detailed steps for using this procedure follow.

Step 1: Prepare Verbal Routines The parent/clinician is asked to think back to previous interactions with the child. He or she may consider certain routines that are always done in a particular way (e.g., saying "one, two, three" when picking up the child). Books and songs that the child enjoys form another area of consideration. The parent/clinician then records his or her interactions with the child over several days. Questions such as, "What activities utilized verbal routines?" "Does the child already tend to vocalize more during certain routines or games?" should be used to analyze the findings. All of these routines, games, or items can be used during intervention.

Step 2: Select Opportunities for Teaching At this point, the parent/clinician assesses which activities will be most motivating for the child. For example, using “one, two, three” because it is associated with getting a piggyback ride is likely a better choice than using “up, up, and away,” which is said during a diaper change. Again, if there are activities in which the child already tends to vocalize more, it may be more effective to establish routines and opportunities in the context of these tasks.

Step 3: Plan the Opportunity The clinician decides which part of the verbal routine to provide for the child and which part he or she will expect the child to complete. In the early stages of learning, the parent/clinician should provide the entire routine; then, when the child is able to anticipate that the reward is about to be provided, the parent can say just the beginning of the routine, leaving the end of the routine “open” for the child to complete. For example, if the activity of choice is swinging, the parent/clinician might tell the child “one, two . . .” and then wait expectantly for the child to approximate the appropriate response of “three” before swinging the child to reinforce the vocalization.

Step 4: Measure Program Effectiveness The primary goal of this intervention technique is to provide a language opportunity that is familiar and easy for the child. Therefore, this can be a useful tool for children who are slow to develop a functional vocabulary or begin to overgeneralize first word attempts. In addition, as the procedure is easier for children and often involves a highly enjoyable activity, the routine-based opportunity can function as a maintenance task to improve motivation. Both a child’s quality of word attempts as well as his or her motivation during learning are essential in teaching early communication. It is recommended that program effectiveness be measured in the following areas: object–label correspondence, correct responding, and affect.

Object–Label Correspondence A primary goal of this intervention is for the child to demonstrate label discrimination in expressive communication. This variable is expressed as the presence of a one-to-one relationship between the child’s vocalization (label) and a desired referent (object). For example, the child only vocalizes /da/ to obtain a toy dog and does not vocalize /da/ for any other objects. Total functional vocabulary can be measured as the number of vocalizations that the child uses only for a given referent.

Correct Responding Because the overall intervention package (PRT) targets a child’s core motivation, it is important to consider the number of learning opportunities in which the child demonstrates success. Tracking the percent of opportunities in which the child responds with correct verbalizations is recommended. A *correct response* can be defined as a response that approximates the correct pronunciation of the target word. For example, if the child vocalizes /ba/ or /all/ for *ball*, this would be scored as correct. Conversely, if the child vocalizes /car/ or /miflglix/ for *ball* or does not respond, this would be scored as incorrect.

Affect It is important to assess the child’s affect to further establish that the child is motivated by the learning process. For more information, see Figure 8.1 and the previous discussion on using an affect scale.

Findings Preliminary data from several nonverbal children with autism in this early intervention program support the effectiveness of incorporating verbal routines as language opportunities into the implementation of PRT. Prior to the introduction of verbal routines in learning opportunities, these children had difficulty developing a functional vocabulary—that is, they would use a variety of word approximations interchangeably across referents. In addition, the children demonstrated a low rate of correct responses and presented with low affect during intervention sessions.

After the incorporation of familiar verbal routines into teaching, these children showed dramatic increases in vocabulary development, correct responses, and affect. Specifically, the children began to consistently complete the carrier phrase when the routine-based opportunity was introduced, and later the children mastered more distinct labels. Eventually an acceleration in vocabulary development was noted. Hence, routine-based opportunities can be instrumental in facilitating object–label correspondence for the children and thereafter can function as a maintenance task to further motivate and stimulate vocabulary development.

Case Example Tara was a 3½-year-old girl diagnosed with autism who was nonverbal prior to participation in the parent education intervention program. When Tara and her father, Bill, attended an intake meeting, Tara did not exhibit any functional expressive speech, nor did she use gestures to communicate her needs. Bill reported that in order to communicate, Tara often engaged in disruptive behaviors, such as hitting, hair pulling, and biting. In addition, Bill reported that Tara had received a variety of different therapies and that he “had little faith in a new approach.”

The primary goal of Tara’s intervention program was to facilitate the development of a functional expressive vocabulary, utilizing PRT, via a parent education model. Language opportunities were based on Tara’s main interests, which were balls, cars, and cookies. Within the first 2 weeks, it was clear that Tara understood that she needed to vocalize during teaching opportunities to receive the desired items. However, producing clear word attempts was rather difficult for Tara, as evidenced by her infrequent attempts. In addition, Tara did not consistently use the same vocalization to communicate. Sometimes she would say “ba” for *ball*, but more often than not, she would say “ma” or “da.” Bill was pleased with Tara’s early progress and offered her the item she appeared to be requesting contingent on any vocalization.

However, over the next months of treatment, Tara did not progress in her ability to discriminate various labels for objects; instead, she tended to use the same word approximations for all objects (e.g., saying “bababa”). When Bill would wait for the appropriate vocalization for a given item, Tara would engage in a tantrum or lose interest. She was not able to consistently and correctly label desired objects in her environment.

One thing that Tara had enjoyed since she was a baby was listening to her father read her favorite books and sing her favorite songs. The clinician explained to Bill how books and songs could also be good opportunities for Tara to use her language. Bill first tried this approach with the song “Five Little Ducks.” He sang, “Five little” and then paused, at which point Tara immediately filled in “ducks.” From that point on, Bill continuously used Tara’s favorite books and songs for language op-

portunities. As Tara became more successful during these routines, she was soon able to consistently and appropriately imitate words in a variety of other contexts and developed 10 distinct words within 2 weeks of introducing the routines.

Selecting Words Using Sounds that a Child Already Uses

As mentioned previously in this chapter, it may be necessary to increase the motivational properties of the language opportunities in order to evoke appropriate functional verbal responses from children who have particular difficulty learning their first words. One approach is to create a language opportunity that is predictable and easier for the child to respond to, such as one that is routine based, as described in the previous section. Similarly, another approach is to carefully and systematically select initial target words for teaching. Specifically, special consideration should be given to the sounds that the child is already producing, as it will be easier for the child to learn to use these sounds for functional communication purposes, rather than targeting a sound that is absent or infrequently produced by the child. As nonverbal children often already produce sounds without communicative intent, it may be worthwhile to choose target words that are similar to these sounds. For example, if the child often says “mmm” while playing, a target word for teaching could be one that uses the phoneme *m* for a request, such as “music” to request having music played. The steps for this process are detailed next.

Step 1: Establish a Baseline It is important to establish a baseline by first asking the basic question, “What sounds does the child make?” The parent/clinician should watch the child play and observe what kinds of sounds he or she makes. Any of the following should be noted:

- Certain contexts in which the child makes sounds more than others
- Times when the child makes a particular sound more often
- Instances in which it seems like the child makes a sound for certain purposes

Step 2: Select Target Words for Teaching Based on observations of the child’s play interactions, the clinician selects the sounds that the child seems to make most frequently as the initial target words for teaching. It is necessary to find out if these sounds resemble anything that might be motivating for the child. For example, if the child says “ooo” quite readily and enjoys trains, one might want to make an association between that sound and “choo-choo.” In addition, one could also teach the child to say “ooo” for help with opening doors and containers.

Step 3: Pair Child’s Vocalizations with Motivating Reinforcers Vocalizations and reinforcers can be paired by using an “incidental” approach or by establishing opportunities based on existing vocalizations.

“Incidental” Pairing of Target Sounds Because the child may not consistently make the targeted sound upon request, it can be helpful to pair the child’s usage of a sound with an item. That is, when the child happens to produce the target sound, he or she should immediately be given the corresponding item. Building on the previous example, while playing with a train set, the child may begin saying “ooo-ooo”

noncontingently. Immediately providing the child with the train can reinforce the relationship between his or her vocalization and obtaining the train.

Establish Language Opportunities Based on Child's Existing Vocalizations Another method involves establishing language opportunities that incorporate items or stimulus materials that are consistent with the child's repertoire of existing vocalizations. For example, if the child often vocalizes "ooo" and is motivated by the train set, one may model saying "choo-choo" instead of "train" as the target word to evoke a functional and appropriate verbal response from the child.

Step 4: Measure Program Effectiveness Measures of program effectiveness are required to demonstrate improvements in expressive communication. Two approaches measure object-label correspondence and percent of overgeneralized responses.

Object-Label Correspondence A primary goal of this intervention is for the child to demonstrate improvements in expressive communication. This variable is defined as the presence of a one-to-one relationship between the child's vocalization (label) and the desired referent (object). For example, the goal is that the child only vocalizes /ca/ for a car and does not vocalize /ca/ for any other objects. It is recommended that total functional vocabulary be measured as the number of vocalizations that the child uses only for a given referent.

Percent of Overgeneralized Responses In order to determine the extent to which the child is utilizing an identical response across referents, calculating the percentage of overgeneralized responses the child makes is recommended. An *overgeneralized response* is defined as one that is used by the child in a contextually inappropriate manner across referents. For example, if the child said "bu" for the ball and also said "bu" to request ice cream, "bu" would be considered an overgeneralized response.

Findings Preliminary outcome data on several nonverbal children with autism from the early intervention program support the use of pretreatment vocalizations in circumventing the problem of overgeneralization of first word attempts or sounds. Prior to using pretreatment vocalizations to select target words for teaching, these children produced the same overgeneralized responses across a variety of items (e.g., vocalizing /baba/ for everything). That is, they did not acquire label discrimination in expressive communication (object-label correspondence) and produced no functional speech.

However, when their existing vocalizations were incorporated into target words for teaching as part of the intervention, the children showed an immediate and significant improvement in their object-label correspondence and no longer produced overgeneralized responses to labeling opportunities. Hence, an inverse relationship was found between the children's ability to discriminate object labels and overgeneralized responses to labeling opportunities. That is, as the children developed a consistent functional vocabulary, they no longer overgeneralized the use of a single vocalization across different referents. Overall, using the children's pretreatment vocalizations to guide the selection for target words appeared to be an effective strategy for eliminating the problem of overgeneralization in the subgroup of nonverbal children who have difficulty acquiring first words.

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